



Revised 03/29/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Otis G. Peterson

Docket No.: S-100,643

Serial No.: 10/630,111

Examiner:

Filed : July 30, 2003

Art Unit:

For : SELF-REGULATING NUCLEAR POWER MODULE

Commissioner for Patents  
Washington, DC 20231

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR 1.56, 1.97, AND 1.98**

Sir:

The documents listed below, copies attached, are submitted in compliance with the duty of disclosure defined in 37 CFR 1.56.

**CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))**

I hereby certify that this correspondence is, on the date shown below, being:

**MAILING**  
☒ deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, Washington, DC 20231.

**FACSIMILE**  
☐ transmitted by facsimile to the United States Patent and Trademark Office.

Date 8/28/03

  
Signature

Mark N. Fitzgerald  
(type or print name of person certifying)

The G.A. Linenberger, et al., article is directed to the use of uranium hydride as an effective nuclear fuel. The entire article is attached.

The John F. Lakner report discusses the dissociation pressure of uranium hydride at temperatures between 700 - 1050°C (outside the range of the current invention). The title page, and the applicable discussion and results section of this lengthy report have been provided.

The James S. Church report discusses the maximum size of uranium hydride powder particles: 74 microns in diameter. The title page and data page of this lengthy report have been provided.

The Charles D. Harmon, II, et. al., manual details the Monte Carlo code (MCNP) that is the industry-accepted standard computer code for predicting performance of reactors. This code was used to calculate critical mass and other important variables of the hydride reactor. The title page and abstract of the latest version of the MCNP manual is attached.

The Samuel Glasstone textbook was used as background information on understanding the steady state and transient behaviors of nuclear reactors. The most applicable sections of the text, including major portions of Chapters 3 and 4, have been attached.

The H.C. Paxton, et. al., report (TID-7028) discusses the parameters for obtaining criticality in common fissile fuels. Copies of the title page, introduction and applicable figure have been attached.

The J.Bloch, et. al., journal article discusses the physical measurements of thermodynamic parameters of a chemical reaction. The first page of the journal article has been attached.

The W.M. Mueller, et. al., book contains a chapter that describes in detail the nature of actinide hydrides. The title page and applicable chapter have been attached.

Finally, the Sidney Nelson report contains a simple calculation for how hydride material could be used in a reactor. The title page and applicable graph of thermal conductivity of hydride fuel as a function of temperature have been attached.

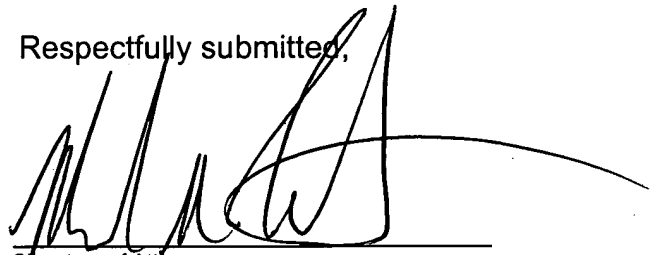
This Information Disclosure Statement is not to be construed as a representation that a search has been made or that additional matter material to the examination of this application does not exist. Applicant does not believe that any of these citations constitutes prior art under 35 U.S.C. 102.

It is requested that the above citations be made of record in the prosecution of this application.

Date: 8/28/03

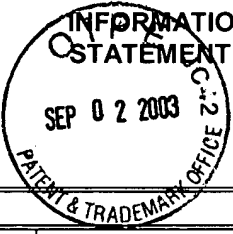
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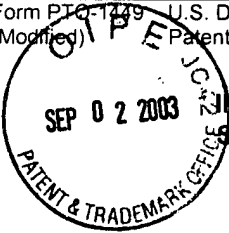
Respectfully submitted,



Signature of Attorney

Mark N. Fitzgerald  
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LC/IP, MS A187  
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Form PTO-1449 U.S. Department of Commerce (Modified) Patent and Trademark Office					Attorney Docket No. S-100,643		Serial No.			
<div style="display: flex; align-items: center; justify-content: center;">  </div>					Applicant(s) Otis G. Peterson					
					Filing Date July 30, 2003		Group			
<b>U.S. PATENTS DOCUMENTS</b>										
EXAMINER INITIAL	PATENT NUMBER					ISSUE DATE	PATENTEE	CLASS	SUB CLASS	FILING DATE
<b>FOREIGN PATENT DOCUMENTS</b>										
EXAMINER INITIAL	PATENT NUMBER					ISSUE DATE	COUNTRY	CLASS	SUB CLASS	Translation YES NO
<b>OTHER DOCUMENTS</b> (Including Author, Title, Date, Place of Publication)										
<input checked="" type="checkbox"/>	G. A. Linenberger et al., "Enriched-Uranium Hydride Critical Assemblies", Nuc. Sci. & Eng. 7, 44-57 (1960)									
<input checked="" type="checkbox"/>	J. F. Lakner, "Isotherms for the U-UH <sub>3</sub> -H <sub>2</sub> System at Temperatures of 700° - 1050°C and Pressures to 137.9MPa", University of California Radiation Laboratory (UCRL) - 51865 (1975)									
<input checked="" type="checkbox"/>	J. S. Church, "Uranium Hydride Fabrication", Los Alamos Manuscript (LAMS) - 872, Quarterly Report (March 15, 1949)									
EXAMINER:							DATE CONSIDERED:			
*EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.										

Form PTO-1449 U.S. Department of Commerce (Modified) Patent and Trademark Office  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> 37 CFR 1.98(b)		Attorney Docket No. S-100,643	Serial No.		
Applicant(s)  Otis G. Peterson			Filing Date July 30, 2003		
Group		<b>OTHER DOCUMENTS</b> (Including Author, Title, Date, Place of Publication)			
X	J. F. Briesmeister, Ed., "MCNP - A General Monte Carlo N-Particle Transport Code, Version 4C", Code Manual LA-13709-M, Los Alamos National Laboratory (2000)				
X	S. Glasstone, Principles of Nuclear Reactor Engineering, D. Van Nostrand Co. (1955), Sec. 1.24				
	H. C. Paxton et al., "Critical Dimensions of Systems Containing U <sup>235</sup> , Pu <sup>239</sup> , and U <sup>233</sup> ", Los Alamos Scientific Laboratory and Oak Ridge National Laboratory Report TID-7028 (June 1964)				
	J. Bloch et al., "Kinetics and Mechanism of the U-H Reaction", Journal of the Less-Common Metals, 81, 301-320 (1981)				
	W. M. Mueller et al., Metal Hydrides, Academic Press (1968) pp 490-530				
X	S. G. Nelson, "High-Temperature Thermal Properties of SNAP-10A Fuel Material", Battelle Memorial Institute Report 1714 (1965)				
EXAMINER:		DATE CONSIDERED:			
*EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					